



Renewable Energy Mapping Initiative

April 2014

Silvia Martinez Romero

A BRIDGE TO A SUSTAINABLE ENERGY FUTURE



Introduction to ESMAP

- **Established** in 1983
- **Multi-donor trust fund** within the World Bank
- **Operated** in over 100 countries – close to 1,000 activities

Mission

- Assist client countries to increase know-how and institutional capacity to achieve environmentally sustainable energy solutions for poverty reduction and economic growth

Strategic Business Plan 2014-2016

- Four main focus areas: clean energy, energy access, energy efficiency, energy sector strategies and assessments

Resources

- Total 2014-16 budget is approx. **US\$148 million**
- More than half is allocated to **regional and country projects**
- **Donors:** Australia, Austria, Denmark, Finland, France, Germany, Japan, Iceland, Lithuania, Netherlands, Norway, Sweden, United Kingdom, and World Bank

A BRIDGE TO A SUSTAINABLE ENERGY FUTURE

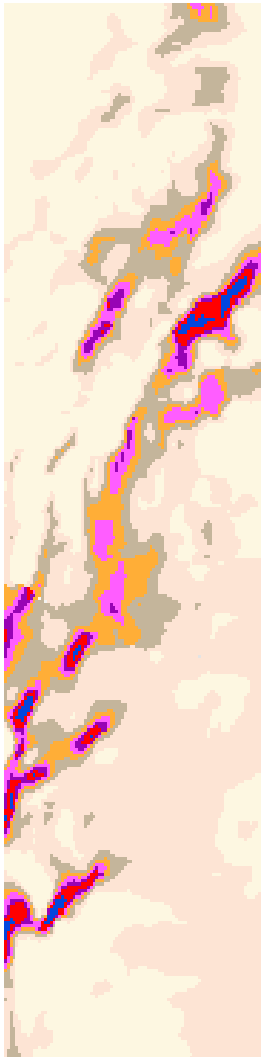


ESMAP Renewable Energy Resource Mapping Initiative

- Launched in October 2012; budget of \$22.5m
- Targets strategic level resource mapping to support government planning and commercial development
- Bank-executed projects supported by ESMAP with funding and technical support
- Covers biomass, small hydro, solar and wind
- Support for modeling, ground-based data collection, geospatial analysis, and capacity building



THE WORLD BANK



Governments

- Better understand resource potential
- Geospatial plan to guide development
- Improved data for calculating feed-in tariffs

Commercial Developers

- Information on high potential areas
- Government zoning reduces uncertainty
- Source of validation data for site assessment

Expert Community

- Contribute to IRENA Global Atlas
- Meteorological data useful for other purposes
- Methodological and modeling improvements





THE WORLD BANK

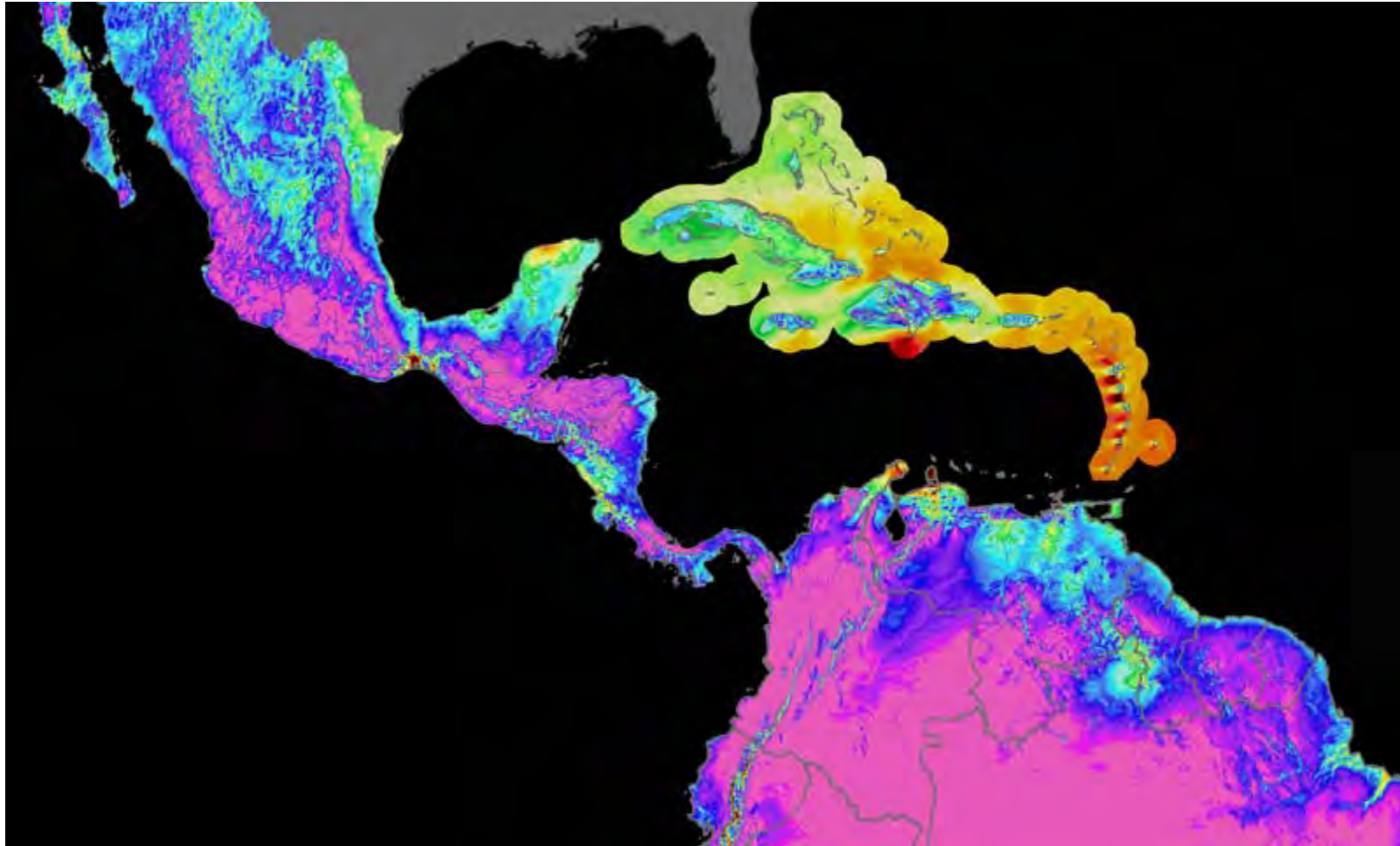


Image credit: AWS Truepower

A BRIDGE TO A SUSTAINABLE ENERGY FUTURE



THE WORLD BANK



A BRIDGE TO A SUSTAINABLE ENERGY FUTURE

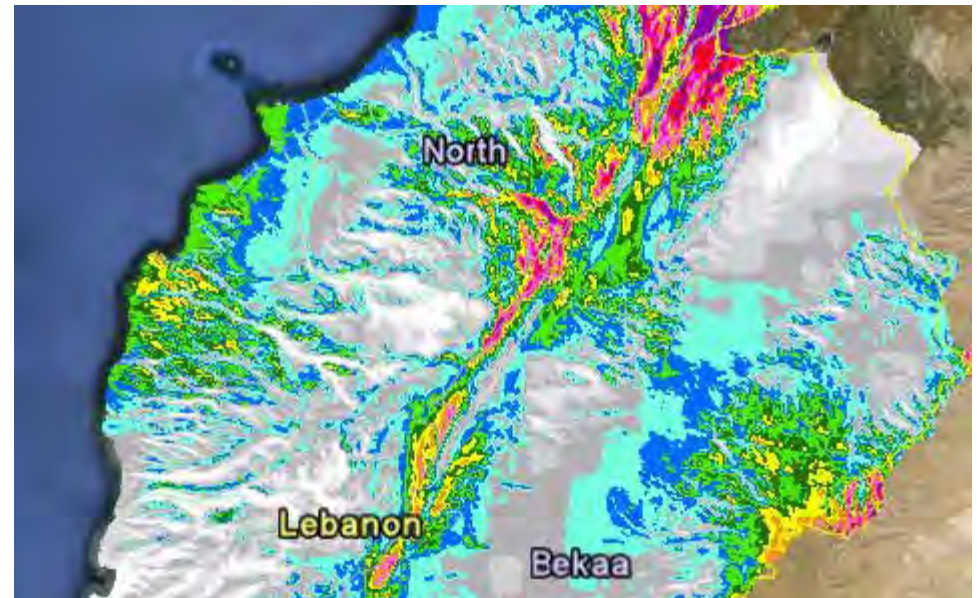
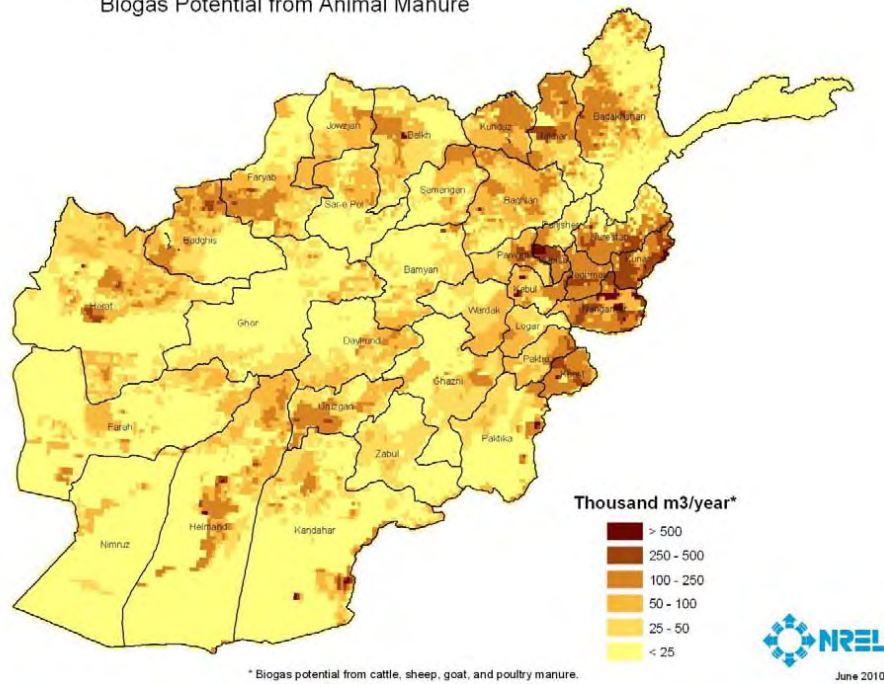


THE WORLD BANK



A BRIDGE TO A SUSTAINABLE ENERGY FUTURE

Biogas Potential from Animal Manure



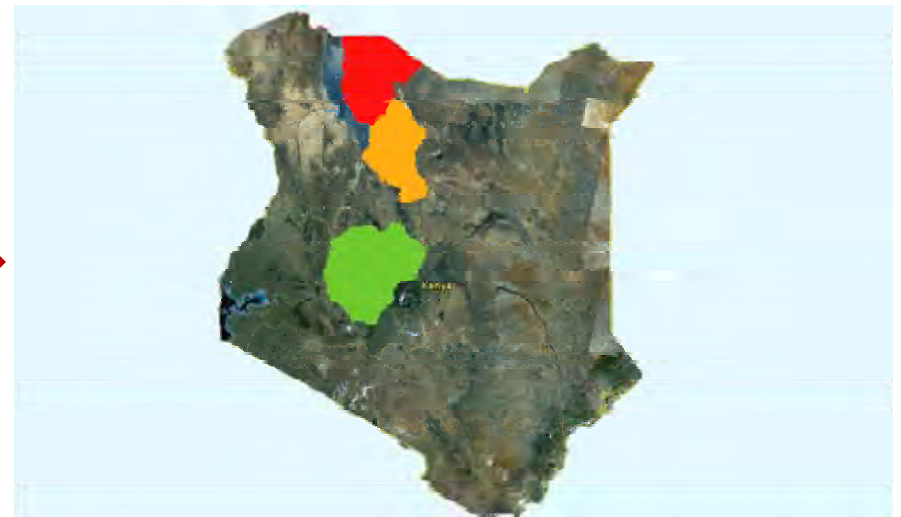
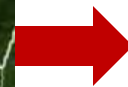
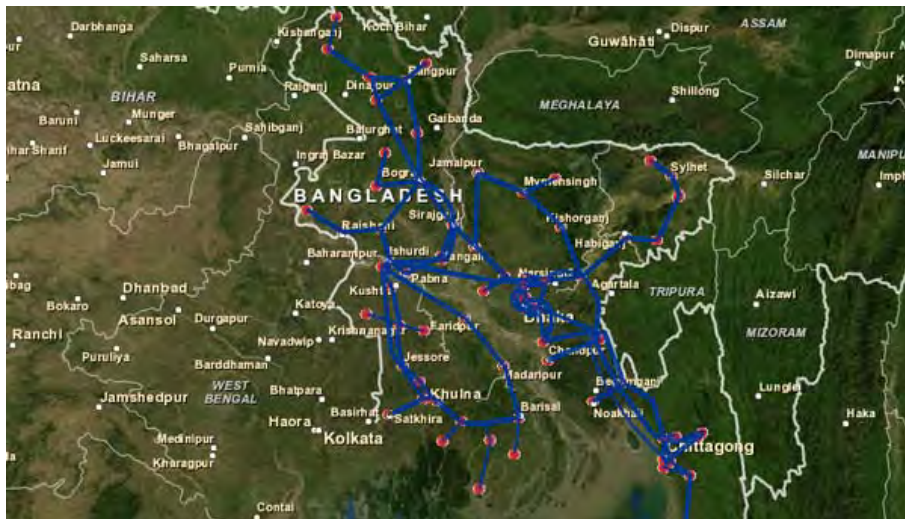


Image credit: Google Maps

A BRIDGE TO A SUSTAINABLE ENERGY FUTURE

Coordinate with other donor-funded programs

Collect and generate geospatial data

Initial outputs inform WB-Client policy dialogue

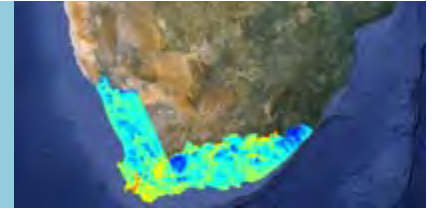
Provide training and capacity building

Build country and global partnerships

Disseminate via open data repository and GIS portal

Phase 1

Scoping and preliminary mapping output based on satellite and global atmospheric and meteorological data



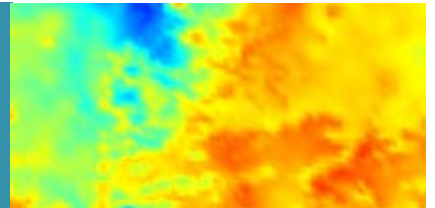
Phase 2

Ground-based data collection (12-24 months)



Phase 3

Production of validated resource atlas based on satellite and ground-based data



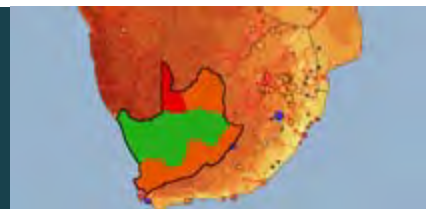
Phase 4

Geospatial planning (GIS) and strategic environmental assessment



Phase 5

Develop and agree policy framework to support investment



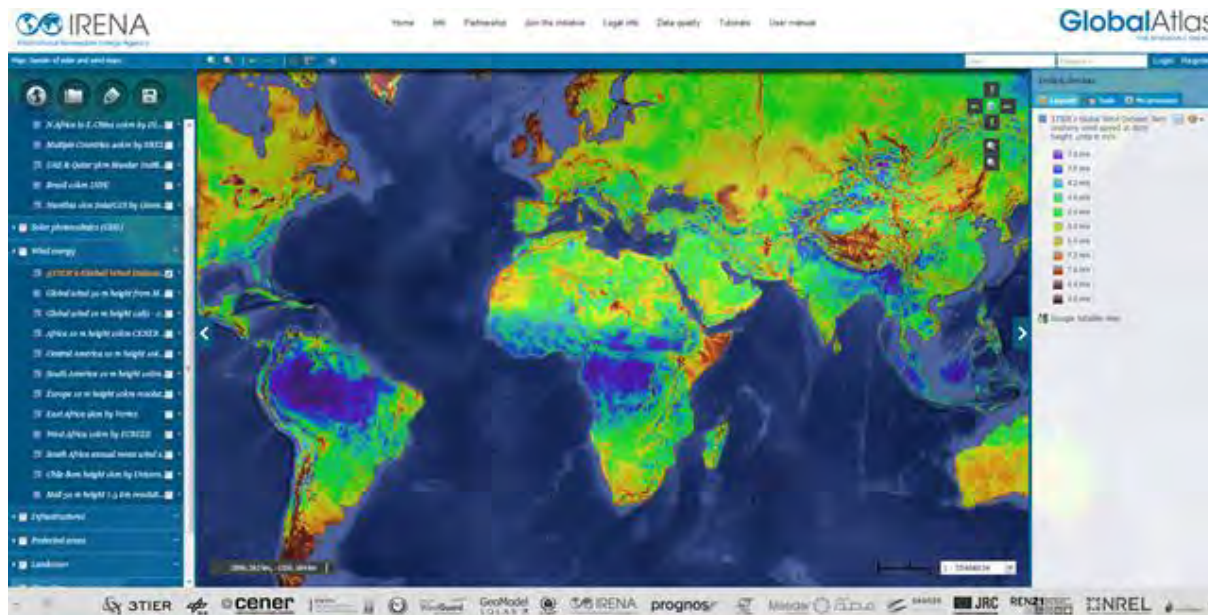


World Bank geoserver

IRENA data catalogue



IRENA Global Atlas



A BRIDGE TO A SUSTAINABLE ENERGY FUTURE



Current ESMAP Pipeline



Country	Biomass	Small Hydro	Solar	Wind
Ethiopia		✓		✓
Indonesia	✓	✓	✓	✓
Lesotho (IFC)				✓
Madagascar	✓	✓	✓	✓
Malawi		✓	✓	✓
Maldives			✓	✓
Nepal				✓
Pakistan	✓		✓	✓
Papua New Guinea	✓	✓	✓	✓
Tanzania	✓	✓	✓	✓
Vietnam	✓	✓	✓	✓
Zambia		✓	✓	✓

A BRIDGE TO A SUSTAINABLE ENERGY FUTURE



Questions? Comments?

For further information: www.esmap.org/RE_Mapping

Connect to a broader community via LinkedIn: 'renewable energy resource mapping' group

